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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,353	07/14/2003	Jong-Tae Kwak	29926/39503	6342
4743	7590	06/07/2004	EXAMINER	
MARSHALL, GERSTEIN & BORUN LLP 6300 SEARS TOWER 233 S. WACKER DRIVE CHICAGO, IL 60606			NGUYEN, MINH T	
			ART UNIT	PAPER NUMBER
			2816	

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/619,353	KWAK ET AL.	
	Examiner	Art Unit	
	Minh Nguyen	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/14/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first and second latches recited in claims 4-5 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because:

- (i) it uses legal phraseology, i.e., "means",

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- (ii) it uses words which can be implied, i.e., "The present invention provides for".

Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities: page 1, line 6, "resister" should be changed to -- register --.

Appropriate correction is required.

Claim Objections

4. Claims 1-3 and 8-10 are objected to because of the following informalities:

In claim 1, line 3, "unit" should be changed to -- units --.

In claim 2, -- . -- should be added to the end of the claim.

In claim 3, last line, "left shift signal" should be changed to -- acceleration shift signal --.

In claims 8-10, the same problems as discussed in claims 1-3, respectively.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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As per claim 1, the claim is indefinite because it fails to particularly point out the structural relationship between the delay model to the rest of the elements in the DLL, i.e., the following phrase should be inserted “the delay model receives the signal output from the delay line” to provide a structural relationship between the delay line and the delay model.

As per claim 5, the recitation a second latch for latching the output signal of the mode decision means is unclear, i.e., it does not make sense for a circuit to include a latch inside to latch the output signal of itself. Clarification is requested.

As per claim 7, the recitation delay value of the delay means is smaller than the value dividing a frequency of the input clock signal is unclear, i.e., there is no frequency divider in the present invention therefore, the recitation does not make sense.

As per claims 8, 12 and 14, the same problems as discussed in claims 1, 5 and 7, respectively.

As per claims 2-7 and 9-17, these claims are further rejected because of the indefiniteness of their independent claims.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6,049,239, issued Eto et al.

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As per claim 1, Eto discloses a register controlled delay locked loop (Fig. 6) for use in a semiconductor memory device (merely an intended use), comprising:

a delay line (delay circuits 33, 34, 12 and 13) having a plurality of delay cell units (Fig. 4) for delaying an non-delayed input clock signal (S1);

a delay model (delay circuits 41 and 42 reflecting the delays of the buffer circuits 21 and 51) for reflecting a delay condition for an actual clock signal path of the non-delayed input clock signal passing through the delay line;

a delay means (43) for delaying an output signal of the delay model for a predetermined time (column 14, lines 8-9);

a first phase comparator (14) for comparing a phase of the output signal provided from the delay model (the signal from the output of the delay model 42 does not pass through the delay means 43) with that of the non-delayed input clock signal;

a second phase comparator (31) for comparing a phase of the output signal of the delay means (the signal from the output of the delay means 43 to the second comparator 31) with that of the non-delayed input clock signal;

a mode decision means (the sub-circuit inside the second phase comparator 31 generates the RESET SIGNAL) for determining a continuous execution or termination of an acceleration mode in response to output signals of the first and second phase comparators (column 14, lines 28-47, i.e., make decision whether the coarse, fine and/or both should be executed);

a shift register control means (part of the delay controls 32 and 15, i.e., column 20, lines 30-52 and Fig. 14, set signals SE, SO and reset signals RE and RO) for outputting left shift

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signal, a right shift signal and an acceleration shift signal in response output signals of the first phase comparator and the mode decision means; and

a shift register (Fig. 14, columns 20-23 describe the operation shift right, left ...) for controlling the delay value of the delay line in response to an output signal from the shift register control means.

As per claim 2, the recited limitation is met because the Eto's second phase comparator 31 is for coarse adjustment and the first phase comparator 14 is for fine adjustment, i.e., the coarse adjustment should not be reactivated when the range is still within $\pm t_d$ (column 14, lines 57-67), or in other words, the delay value t_d is set for the acceleration shift signal to activate the coarse adjustment.

As per claim 3, Eto further discloses the shift register (Fig. 14), comprises:

a plurality of latches (NAND 432-n and inverter 433-n constitute a latch), a reset terminal connected to reset R, an output terminal (5a-n), a sub-output terminal (5a-n+1);

a plurality of first switches (436-n) receiving RE signal for left shift;

a plurality of second switches (434-n) receiving SE signal for right shift;

a plurality of third switches (439-n) for acceleration shift.

As per claim 4, the recited first latch reads on the latch 425 shown in Fig. 16.

As per claim 5, insofar as understood, the recited second latch reads on the latch 426 shown in Fig. 16.

As per claim 6, the recited limitation is met since Eto's delay units are discrete components (Figs. 2 and 4), i.e., the delay value is a multiple of the delay units.

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As per claim 7, insofar as understood, the delay value of the delay means must be smaller than the value dividing the input clock signal S1 by the divider 30 to ensure the delay value is within a time period of the non-delayed clock input signal.

As per claims 8-14, these claims are rejected for the same reasons noted in claims 1-7, respectively.

Allowable Subject Matter

7. Claims 15-17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 15-17 are allowable because the prior art of record fails to disclose or suggest the inclusion of an acceleration mode delay controller for controlling the delay value according to operation frequency information as recited in claim 15.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Nguyen whose telephone number is 571-272-1748. The examiner can normally be reached on Monday, Tuesday, Thursday, Friday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



5/28/04

Minh Nguyen
Primary Examiner
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